

When U.S. re-opens, will those exposed to coronavirus have lasting immunity?

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(HealthDay)—Once you've had COVID-19 and recovered, are you now

immune from the virus?

That's the critical question that will help shape how the United States re-opens for business in the coming months.

Unfortunately, there's still no clear answer.

It's still too soon to tell if the first wave of COVID-19 survivors will remain immune to the virus for any appreciable length of time.

But the nation's top infectious disease expert, Dr. Anthony Fauci, thinks there's a good chance that people might gain lasting immunity following COVID-19 infection.

"We're making an assumption, which I think is a reasonable assumption, that this virus is not changing very much," said Fauci, director of the U.S. National Institute of Allergy and Infectious Diseases. "If we get infected in February and March, and recover, next September or October the person who was infected I believe is going to be protected. We don't know 100% for sure, but I think that is a reasonable assumption."

But there's also reason to question the potential for lasting immunity against COVID-19, said Dr. Greg Poland, director of the Vaccine Research Group at the Mayo Clinic, in Rochester, Minn.

Immunity may vary

The novel coronavirus behind COVID-19 belongs to a family of viruses that has a very uneven track record with the [human immune system](#), Poland noted.

"With the four seasonal beta coronaviruses that circulate and cause all

the [upper respiratory infections](#) you see in your practice, those people lose immunity in months to a year or two," Poland said. That's why people fall prey to the common cold again and again.

This happens because the body uses a relatively simple strategy to fight off common cold coronaviruses, and this strategy does not appear to make a lasting impression on immune system memory, Poland explained.

Still, there's a little reason for hope. The more threatening coronavirus diseases, SARS ([severe acute respiratory syndrome](#)) and MERS (Middle East respiratory syndrome), appear to produce immunity that potentially lasts longer, but the data is limited because both viruses have infected much fewer people than the COVID-19 pathogen, experts said.

One group of 176 SARS survivors carried high levels of SARS-specific [antibodies](#) for an average of two years, but their immune response appeared to wane starting in the third year, according to a 2007 study in the journal *Emerging Infectious Diseases*.

A smaller study of nine health care workers in Saudi Arabia found great variability in antibody response to MERS, according to a 2016 report in *Emerging Infectious Diseases*.

Two patients who developed severe MERS-related pneumonia would end up with a persistent antibody response that lasted more than a year and a half, the researchers said.

However, other patients who did not develop serious infections did not gain high levels of MERS-specific antibodies, making any immunity potentially short-lived, the report said.

Monkey study shows promise

But early animal research that hasn't yet been peer-reviewed shows that antibodies in rhesus monkeys that had COVID-19 protected them from becoming infected when exposed again to the virus, Chinese scientists reported on the website BioRxiv.

Poland is hopeful that COVID-19 will produce a long-lasting immunity in people who become very sick, because the disease then prompts a strong immune response.

"You're getting pretty heavy infection, and I think that drives a more balanced [immune response](#) that I'm hoping is more likely to lead to longer-lasting durable immunity," Poland said.

On the other hand, Poland also noted that COVID-19's short incubation period of four to five days, on average, means that the infection may not be strong enough in some people to protect against future infection, he told *ABC News*.

Unfortunately, it will take time to see whether the first folks emerging from the shadow of COVID-19 are immune to the virus, said Dr. Amesh Adalja, a senior scholar with the Johns Hopkins Center for Health Security, in Baltimore.

"It's likely that we'll have some clues in the coming weeks; however, it may take longer to have an ironclad understanding of what immunity requires," Adalja said.

One problem with assessing immunity is that there isn't a solid means in the United States right now for testing a patient's blood for COVID-19 antibodies.

Reliable antibody tests needed

Such testing would show who has been exposed to the virus, even detecting people who never showed any symptoms. Tracking those people would allow scientists to find out how long immunity to COVID-19 lasts.

Antibody tests that have received expedited approval by the U.S. Food and Drug Administration are reaching the market, but experts all say the tests can't yet be trusted because they were approved without adequate clinical trials to determine their accuracy.

"The upside is we have the test. The downside is we don't exactly know how well they are going to perform," said Dr. Angie Caliendo, executive vice chair of medicine at Brown University's Alpert Medical School in Providence, R.I.

Laboratories need to make sure the tests accurately detect antibodies that target the novel coronavirus behind COVID-19, without also responding to antibodies created to fight off other similar viruses, said Dr. Kim Hanson, an infectious disease expert with the University of Utah, in Salt Lake City.

"We put the onus on ourselves to try to get a sense of how well these tests perform," Hanson said, noting that her lab has been testing blood samples for weeks now to determine the accuracy of the antibody tests.

Even after establishing that the antibody tests are effective, doctors still won't know whether a person with heavy levels of COVID-specific antibodies is truly immune, warned Dr. Carlos Del Rio, chair of global health at the Emory University Rollins School of Public Health, in Atlanta.

Del Rio pointed out that people with HIV develop antibodies against the virus, but those antibodies don't confer any immunity.

"Just because you have antibodies doesn't mean you have immunity," Del Rio noted.

Complex immune processes

To complicate matters, the human immune system also has other ways to defeat infection that don't rely on antibodies, Adalja added.

"It's important to remember that not all immunity is antibody-based and that there are other arms of the immune system that may be able to send off the virus upon a second exposure," Adalja said.

All of the problems confronting researchers as they try to assess immunity against COVID-19 are highlighted by recent reports from South Korea of patients who appear to have fallen ill with a second infection of the novel coronavirus.

South Korea's Centers for Disease Control is investigating nearly 100 patients who tested positive for COVID-19 infection a second time, according to the World Health Organization.

Jeong Eun-kyeong, director-general of the Korean CDC, said in a briefing they are concerned that COVID-19 might be "reactivating" in those patients, much like childhood chicken pox infections lie dormant for decades only to cause shingles in seniors.

"While we are putting more weight on reactivation as the possible cause, we are conducting a comprehensive study on this," Jeong said.

U.S. infectious disease experts at this time remain skeptical about the reports of second COVID-19 infections, particularly since testing for the virus has been flawed.

"Are these people who were infected previously and now getting re-infected or are they people who were just not infected previously and remain susceptible to the [virus](#)?" said Dr. Jeanne Marrazzo, director of infectious diseases at the University of Alabama, Birmingham.

"We're hearing a lot, we're seeing a lot," Marrazzo said, but it's unclear how good the antibody blood tests performed on those patients were.

More information: The U.S. Centers for Disease Control and Prevention has more about [COVID-19](#).

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